

## **REEM Trophic Interactions Laboratory Groundfish Diet Database.**

The REEM Trophic Interactions Lab's Groundfish Diet Database is maintained as an Oracle 11g database. The database is comprised of 4 basic tables maintained for 2 areas. For all Alaskan waters data, the table types are the Predator-Prey (PredPrey), Prey-Length (PreyLen), Haul, and Intestine (Intest). Each of the 4 table's definitions are shown below in Tables 1-4 respectively. Within these data tables, data are separated by region. The five regions and their abbreviations are the Bering Sea (BS), Aleutians (AI), Gulf of Alaska (GOA), Chukchi (CH) and Beaufort Sea (BF). West coast data are maintained separately in tables named PP\_WOC (pred-prey), PL\_WOC (prey length), Haul\_WOC (haul), and Intest\_WOC (intestine). All tables are owned by the user FOODLAB and must be referenced as such (ie. FOODLAB.PredPrey) to gain read only access to the data. The table definitions for each of the tables will be discussed in this document. A fifth table documents any changes made to the database. DBEdit contains the field's table name, vessel, cruise, date, and edits. The last field being a text field that documents the edits made.

Each Alaskan region is defined as the following:

**Aleutian islands data:** On the north side of the chain, all hauls at bottom depths of 550m or less will get assigned to AI (current survey strata lines can assign RACE strata at these bottom depths). On the south side of the chain, all hauls (regardless of bottom depth) westward of 170 W longitude get assigned to AI. INPFC areas 541, 542, 543.

**Bering Sea data:** All hauls on the shelf and slope EBS strata go to EBS and any hauls in the Aleutian Basin (bottom depth greater than 550m north of Aleutian chain) and any BS hauls deeper than the 1400m slope strata would go into this database but would not get a RACE survey code (strata = 0)  
INPFC areas 508, 509, 512, 513, 514, 516, 517, 518, 521, 524, 530, 550.

**Gulf of Alaska data:** All hauls eastward of 170 W longitude, south of the Aleutians or the Alaska Peninsula. INPFC areas 610, 620, 630, 640, 650, 690.

**Chukchi data:** All hauls north of 65.6° N latitude not contained within the Beaufort Sea

**Beaufort Sea data:** all data collected within the Beaufort Sea.

**Data Verification and Validation:** Error trapping and checking occur at two levels of the stomach analysis process. Stomach data are first checked as the data are generated and entered into an online data entry form. Here, values for predator and prey species codes, stomach weight as a percentage of body weight, prey counts, sizes, and life history codes are checked for consistency and validity. These data are then error checked again using error checking scripts prior to being loaded into the production Oracle database. Haul data come from outside sources and are generally loaded directly into our Oracle database

from a published database and therefore assumed to have been error checked. However, we do still check for missing values and mismatched data in our database.

#### Useful Links

REEM:

Data Overview: <http://www.afsc.noaa.gov/REFM/REEM/Data/Default.htm>

Data Access: <http://www.afsc.noaa.gov/REFM/REEM/DBDefault.htm>

Trophic Interactions Manuals:

<http://www.afsc.noaa.gov/REFM/REEM/Manuals/Default.htm>

RACE:

Groundfish Manuals:

<http://www.afsc.noaa.gov/RACE/groundfish/manuals.htm>

### ***Predator-Prey Table***

#### Quarter

A one-digit numeric field that allows null values representing the quarter from which the sample was collected. Quarter 1 represents January through March, quarter 2 represents April through June, quarter 3 represents July through September and quarter 4 represents October through December.

#### Year

This is a 4-digit numeric field that does not accept null values, acceptable values are any four-digit year.

#### Vessel

A 4-digit numeric field that does not accept null values, acceptable values are any vessel code.

#### Cruise

A 6-digit numeric field that does not accept null values, acceptable values are any cruise code. Survey cruise numbers are generally formatted as YEARXX (201501) whereas non-survey cruise numbers are generally formatted as XXYEAR (012015)

#### Type

A 1-digit numeric field that does not accept null values indicating the stomach analysis type performed to generate the associated data. Acceptable values are 2, representing REEM personnel shipboard scans, 3, representing laboratory scans, 4, representing non-REEM personnel shipboard scans and all shipboard scans performed prior to 2004, 6,

representing quantitative laboratory analysis (pred-prey form or all prey weighed), and 9, representing plant collected (observer) data.

*Sta\_ID\_Let- Deprecated*

A 2-digit character field that allows null values or a station ID letter based on the RACE station grid. Bering Sea Data only. This field indicates the station ID letter from which the samples were collected. Not maintained, use Station\_ID from the Haul table.

*Sta\_ID\_Num- Deprecated*

A 2-digit character field that allows null values or a station ID number based on the RACE station grid. Bering Sea Data only. This field indicates the station ID number from which the samples were collected. Not maintained, use Station\_ID from the Haul table.

*Seq\_Num- Deprecated*

A 4-digit numeric field that allows null values. This represents the sequence number from the old pred-prey form used in the lab for quantitative analysis. Sequence number uniquely identified a record from a given stomach. These are not currently maintained.

*Haul*

A 4-digit numeric field that does not allow null values representing the haul number from which the associated stomach data were collected.

*Pred\_Specn*

A 4-digit numeric field that does not allow null values. This is the predator specimen number assigned to the stomach when it was collected in the field. Prior to in-lab form data entry, this was a 2-digit number assigned in the lab at the time of analysis.

*Pred\_Nodc*

A 10-digit numeric field that does not allow null values representing the NODC code for the predator from which the given data were collected. Consult REEM NODC code dictionary for definitions as some codes have been customized.

*Pred\_Lh*

*Deprecated* A 1-digit numeric field that allows null values representing the life history stage of the predator from which the stomachs were collected. Table 5 contains the acceptable values for this field. Not currently maintained.

#### Pred\_Full

A 1-digit numeric field that allows null values representing predator stomach fullness at the time of analysis. Values are null, 1(empty stomach), 2(trace of prey), 3(25% fullness), 4(50% fullness), 5 (75% fullness), 6(100% fullness) and 7(distended stomach). New data should not include null values

#### Pred\_Dig

A 1-digit numeric field that does not allow null values representing the state of digestion of a given prey item. Values are 1(empty stomach), 2(traces of prey) 3(75% digested), 4(50% digested), 5(25% digested) and 6(fresh prey).

#### Pred\_Stomwt

An 8.3-digit numeric field that does not allow null values representing the total content weight (g) of a given stomach. A value of 0 indicates an empty stomach.

#### Prey\_Nodc

A 10-digit numeric field that does not allow null values representing the NODC code for the prey item. Consult REEM NODC code dictionary for definitions as some codes have been customized. A value of 0 indicates an empty stomach.

#### Prey\_Lh

A 1-digit character field that allows null values representing the life history stage of the prey item. Table 6 contains the acceptable values for this field.

#### Prey\_cnt

A 4-digit numeric field that allows null values representing the total count of a given prey. A null value indicates no count was recorded.

#### Prey\_twt

An 10.5-digit numeric field that does not allow null values representing the total weight (g) of a given prey. A value of 0.0 indicates an empty stomach.

#### Pred\_Sex

A 1-digit numeric field that allows null values representing the sex of the predator. Acceptable values are null, 1(male), 2(female) or 3(unsexed or juvenile).

#### Prey\_Parts

A 1-digit character field that allows null values representing the parts code, if any, of the prey item. In addition to a null value, indicating no parts code used, parts codes are listed in Table 7.

#### Pred\_Len

A 4.1-digit numeric field that does not allow null values representing the fork length (cm) of the predator.

#### Pred\_Mat

A 1-digit numeric field that allows null values representing the maturity state (spawning condition) of the predator. Acceptable values are null, 1 indicating spawning, and 0 indicating non-spawning.

#### Pred\_Wt

A 7.1 numeric field that allows null values representing the weight (g) of the predator calculated from established length-weight regressions. May be null if no established length-weight regression is available.

#### Start\_Hour

A 4-digit numeric field that allows null values representing the 24-hour time at which the trawl from which the predator was collected began.

#### Hauljoin

A 12-digit numeric field that does not allow null values. Each hauljoin uniquely identifies a given vessel, cruise, haul combination. A foreign key to the haul table.

#### Predjoin

A 12-digit numeric field that uniquely (hauljoin, pred\_nodc, pred\_specn) identifies a given stomach sample.

#### Note

A 100 place character field that allows comments about the related predator or prey.

#### Preyjoin

A 12-digit numeric field that uniquely identifies a given prey item. Not currently maintained.

## ***Prey Length Table***

### Quarter

This is a one-digit numeric field with acceptable values of null, 1, 2, 3, 4. Quarter 1 represents January through March, quarter 2 represents April through June, quarter 3 represents July through September and quarter 4 represents October through December.

### Year

This is a 4-digit numeric field that does not accept null values, acceptable values are any four-digit year.

### Vessel

A 4-digit numeric field that does not accept null values, acceptable values are any vessel code.

### Cruise

A 6-digit numeric field that does not accept null values, acceptable values are any cruise code. Survey cruise numbers are generally formatted as YEARXX (201501) whereas non-survey cruise numbers are generally formatted as XXYEAR (012015)

### Type

A 1-digit numeric field that does not accept null values indicating the stomach analysis type performed to generate the associated data. Acceptable values are 2, representing REEM personnel shipboard scans, 3, representing laboratory scans, 4, representing non-REEM personnel shipboard scans and all shipboard scans performed prior to 2004, 6, representing quantitative laboratory analysis (pred-prey form or all prey weighed), and 9, representing plant collected (observer) data.

### *Sta\_ID\_Let-Deprecated*

A 2-digit character field that allows null values or a station ID letter based on the RACE station grid. Bering Sea Data only. This field indicates the station ID letter from which the samples were collected. Not maintained, use Station\_ID from the Haul table.

### *Sta\_ID\_Num- Deprecated*

A 2-digit character field that allows null values or a station ID number based on the RACE station grid. Bering Sea Data only. This field indicates the station ID number from which the samples were collected. Not maintained, use Station\_ID from the Haul table.

Seq\_Num- *Deprecated*

A 4-digit numeric field that allows null values. This represents the sequence number from the old pred-prey form used in the lab for quantitative analysis. Sequence number uniquely identified a record from a given stomach. These are not currently maintained.

Haul

A 4-digit numeric field that does not allow null values representing the haul number from which the associated stomach data were collected.

Pred\_Specn

A 4-digit numeric field that does not allow null values. This is the predator specimen number assigned to the stomach when it was collected in the field. Prior to in-lab form data entry, this was a 2-digit number assigned in the lab at the time of analysis.

Pred\_Nodc

A 10-digit numeric field that does not allow null values representing the NODC code for the predator from which the given data were collected. Consult REEM NODC code dictionary for definitions as some codes have been customized.

Pred\_Lh

A 1-digit numeric field that allows null values representing the life history stage of the predator from which the stomachs were collected. Table 5 contains the acceptable values for this field.

Pred\_Len

A 4.1-digit numeric field that does not allow null values representing the fork length (cm) of the predator.

Pred\_Sex

A 1-digit numeric field that allows null values representing the sex of the predator. Acceptable values are null, 1 indicating male, 2 indicating female or 3 indicating unsexed or juvenile.

#### Prey\_Nodc

A 10-digit numeric field that does not allow null values representing the NODC code for the prey item. Consult REEM NODC code dictionary for definitions as some codes have been customized.

#### Prey\_Lh

A 1-digit character field that allows null values representing the life history stage of the prey item. Table 6 contains the acceptable values for this field.

#### Prey\_Sz1

An 8.3-digit numeric field that does not allow null values representing the standard length (mm) of fish prey, carapace width (mm) of Majid crabs, or carapace length of Lithodid crabs. This is the primary prey size measurement

#### Prey\_Sz2

An 8.3-digit numeric field that allows null values representing the fork length (mm) of fish prey or carapace length (mm) of Majid crabs. This is a secondary prey size measurement.

#### Prey\_Sz3

An 8.3-digit numeric field that allows null values representing miscellaneous auxiliary prey size measurements.

#### Empty\_1

An 8.3-digit numeric field that allows null values. Unused.

#### Prey\_Sex

A 1-digit numeric field that allows null values representing the sex of the prey. Acceptable values are null, 1 indicating male, 2 indicating female or 3 indicating unsexed or juvenile. A prey sex code of 5 may be used to indicate a fish length that was estimated with a method other than the Pollock otolith measurements as noted below. Values of 6-8 are used indicating the condition of walleye pollock otoliths used for estimating the length of the prey fish they were removed from. 6 indicating fair, 7 indicating good, and 8 indicating excellent. See the lab manual for a description of the protocol for using walleye pollock otoliths for estimating prey length.

#### Hauljoin

A 12-digit numeric field that does not allow null values. Each hauljoin uniquely identifies a given vessel, cruise, haul combination. A foreign key to the haul table.



Predjoin

A 12-digit numeric field that uniquely (hauljoin, pred\_nodc, pred\_specn) identifies a given stomach sample.

## ***Intestine Table***

Quarter

A one-digit numeric field with acceptable values of null, 1, 2, 3, 4. Quarter 1 represents January through March, quarter 2 represents April through June, quarter 3 represents July through September and quarter 4 represents October through December.

Year

A 4-digit numeric field that does not accept null values, acceptable values are any four-digit year.

Vessel

A 4-digit numeric field that does not accept null values, acceptable values are any vessel code.

Cruise

A 4-digit numeric field that does not accept null values, acceptable values are any cruise code. Survey cruise numbers are generally formatted as YRXX (1501) whereas non-survey cruise numbers are generally formatted as XXYY (0115)

Type

A 1-digit numeric field that does not accept null values indicating the stomach analysis type performed to generate the associated data. Acceptable values are 2, representing REEM personnel shipboard scans, 3, representing laboratory scans, 4, representing non-REEM personnel shipboard scans and all shipboard scans performed prior to 2004, 6, representing quantitative laboratory analysis (pred-prey form or all prey weighed), 7, representing intestine analysis, and 9, representing prey length data

#### *Sta\_ID\_Let-Deprecated*

A 2-digit character field that allows null values or a station ID letter based on the RACE station grid. Bering Sea Data only. This field indicates the station ID letter from which the samples were collected. Not maintained, use Station\_ID from the Haul table

#### *Sta\_ID\_Num-Deprecated*

A 2-digit character field that allows null values or a station ID number based on the RACE station grid. Bering Sea Data only. This field indicates the station ID number from which the samples were collected. Not maintained, use Station\_ID from the Haul table

#### *Seq\_Num-Deprecated*

A 4-digit numeric field that allows null values. This represents the sequence number from the old pred,prey form used in the lab for quantitative analysis. Sequence number uniquely identified a record from a given intestine. These are currently not maintained.

#### *Haul*

A 3-digit numeric field that does not allow null values representing the haul number from which the associated intestine data were collected.

#### *Pred\_Specn*

A 4-digit numeric field that does not allow null values. This is the predator specimen number assigned to the intestine when it was collected in the field. Prior to in,lab form data entry, this was a 2-digit number assigned in the lab at the time of analysis.

#### *Pred\_Nodc*

A 10-digit numeric field that does not allow null values representing the NODC code for the predator from which the given data were collected. Consult REEM NODC code dictionary for definitions as some codes have been customized.

#### *Pred\_Lh*

A 1-digit numeric field that allows null values representing the life history stage of the predator from which the intestine were collected. Table 5 contains the acceptable values for this field.

#### *Pred\_Full*

A 1-digit numeric field that allows null values representing the fullness of the predators intestine the time of analysis. Values are null, 1(empty intestine), 2(trace of prey), 3(25% fullness), 4(50% fullness), 5(75% fullness), 6(100% fullness) and 7 (distended stomach).

#### Pred\_Dig

A 1-digit numeric field that does not allow null values representing the state of digestion of a given prey item. Values are 1(empty intestine), 2(traces of prey), 3(75% digested), 4(50% digested), 5(25% digested) and 6(fresh prey).

#### Pred\_Intwt

An 8.3-digit numeric field that does not allow null values representing the total content weight of a given intestine. A value of 0 indicates an empty intestine, ,9 indicates that an intestine was not analyzed with the associated stomach.

#### Prey\_Nodc

A 10-digit numeric field that does not allow null values representing the NODC code for the prey item. Consult REEM NODC code dictionary for definitions as some codes have been customized.

#### Prey\_Lh

A 1-digit character field that allows null values representing the life history stage of the prey item. Table 6 contains the acceptable values for this field.

#### Prey\_cnt

A 4-digit numeric field that allows null values representing the individual count of a given prey.

#### Prey\_twt

An 8.3-digit numeric field that does not allow null values representing the total weight of a given prey.

#### Pred\_Sex

A 1-digit numeric field that allows null values representing the sex of the predator. Acceptable values are null, 1 indicating male, 2 indicating female or 3 indicating unsexed or juvenile.

#### Prey\_Parts

A 1-digit character field that allows null values representing the parts code, if any, of the prey item. In addition to a null value, indicating no parts code used, parts codes are listed in Table 7.

#### Pred\_Len

A 4.1-digit numeric field that does not allow null values representing the fork length (cm) of the predator.

#### Pred\_Mat

A 1-digit numeric field that allows null values representing the maturity state (spawning condition) of the predator. Acceptable values are null, 1 indicating spawning, and 0 indicating non,spawning.

#### Pred\_Wt

A 7.1 numeric field that allows null values representing the weight (g) of the predator calculated from established length weight regressions.

#### Start\_Hour

A 4-digit numeric field that allows null values representing the 24,hour time at which the trawl from which the predator was collected began.

#### Hauljoin

A 12-digit numeric field that does not allow null values. Each hauljoin uniquely identifies a given vessel, cruise, haul combination. A foreign key to the haul table.

#### Predjoin

A 12-digit numeric field that uniquely identifies a given stomach sample. Not currently maintained.

### ***Haul Table***

The variable definitions in the haul table match those of the RACEBASE Haul table where the variables have the same name. RACE manuals can be found at <http://www.afsc.noaa.gov/RACE/groundfish/manuals.htm>

#### Vessel

A 4-digit numeric field that does not accept null values, acceptable values are any vessel code.

#### Cruise

A 6-digit numeric field that does not accept null values, acceptable values are any cruise code. Survey cruise numbers are generally formatted as YEARXX (201501) whereas non-survey cruise numbers are generally formatted as XXYEAR (012015)

#### Haul

A 3-digit numeric field that does not allow null values representing the haul number from which the associated stomach data were collected.

#### Year

A 4-digit numeric field that does not accept null values, acceptable values are any four-digit year.

#### Month

A 2-digit numeric field that does not allow null values representing the month from which the haul was collected.

#### Day

A 2-digit numeric field that does not allow null values representing the day of the month from which the haul was collected.

#### Rlat

An 8.2 numeric field that does not allow null values representing the latitude (decimal degrees) from which the haul was collected. This represents the haul back location.

#### Rlong

A 9.2 numeric field that does not allow null values representing the longitude (decimal degrees) from which the haul was collected. This represents the haul back location. Eastern longitudes are represented by negative values, western by positive.

#### Gear\_Depth

A 4-digit numeric field that allows null values representing the average gear depth (m).

#### Bottom\_Depth

A 4-digit numeric field that allows null values representing the average bottom depth (m).

#### Start\_Hour

A 4-digit numeric field that allows null values representing the 24 hour (hhmm) start time of a given haul.

#### Duration

A 5.3-digit numeric field that allows null values representing the length of time (hours) the trawl was in the water.

#### Distance

A 6.2-digit numeric field that allowed null values representing the distance (nm) fished.

#### Haul\_Type

A 3-digit numeric field that does not allow null values representing the type of haul conducted. Acceptable values are 0, 3, 4, 5, 6, 7 for bottom trawls, 1, 2, 8, 10 for off-bottom trawls (see RACE ADP guide for description of codes <http://www.afsc.noaa.gov/RACE/groundfish/manuals.htm>), 32 for longline and 37 for pots, 9 for observer samples collected at plants or from vessels delivering to plants.

#### Stratum

A 5-digit numeric field that allows null values representing the RACE stratum number within which the haul was conducted.  
(<http://www.afsc.noaa.gov/RACE/groundfish/manuals.htm>)

#### Surface\_Temp

A 4.2-digit numeric field that allows null values representing the surface water temperature (deg C).

#### Gear\_Temp

A 4.2-digit numeric field that allows null values representing the gear water temperature (deg C).

#### Bottom\_Type

A 3-digit numeric field that allows null values representing the bottom type, codes can be found in a current RACE ADP manual.  
(<http://www.afsc.noaa.gov/RACE/groundfish/manuals.htm>)

#### Wire\_Out

A 4-digit numeric field that allows null values representing the amount of wire (m) out during the trawl.

#### Gear

A 4-digit numeric field that allows null values representing the gear used, codes can be found in a current RACE ADP manual.  
(<http://www.afsc.noaa.gov/RACE/groundfish/manuals.htm>)

#### Accessories

A 4-digit numeric field that allows null values representing the gear accessories used, codes can be found in a current RACE ADP manual.  
(<http://www.afsc.noaa.gov/RACE/groundfish/manuals.htm>)

#### Subsample

A 2-digit numeric field that allows null values representing the subsample type used if any, codes can be found in a current RACE ADP manual.  
(<http://www.afsc.noaa.gov/RACE/groundfish/manuals.htm>)

#### Performance

A 2-digit numeric field that allows null values representing the gear performance, codes can be found in a current RACE ADP manual.  
(<http://www.afsc.noaa.gov/RACE/groundfish/manuals.htm>)

#### INPFC\_Area

A 3-digit numeric field that allows null values representing the INPFC area from which the sample was collected.

#### StationID

A 9-digit alphanumeric field that allows null values representing the RACE station ID number

#### Hauljoin

A 12 digit numeric field that does not allow null values. Each haul has a unique hauljoin, this is the primary key for the haul table and is used to relate haul information to the other tables.

#### Start\_Date

A date string that allows null values representing the start date (mm/dd/yyyy) of the haul.

#### Region

A 6-place VarChar2 field that does not allow null values for region. Current values are BS (Bering Sea), GOA (Gulf Of Alaska), AI (Aleutian Islands), BF (Beaufort Sea), CH (Chukchi)

#### Cruise\_Type

A 20-place VarChar2 that does not allow null values for cruise type representing the type of cruise from which the samples were collected. Current values are ADFG, Observer, Other, REFM, Race\_Groundfish, Race\_Hydro, Race\_Other.



Table 1. Foodlab.PredPrey table definition.

Column Name	Null?	Data Type
QUARTER		NUMBER(1)
YEAR	NOT NULL	NUMBER(4)
VESSEL	NOT NULL	NUMBER(4)
CRUISE	NOT NULL	NUMBER(6)
TYPE	NOT NULL	NUMBER(1)
STA_ID_LET		CHAR(2)
STA_ID_NUM		NUMBER(3)
SEQ_NUM		NUMBER(4)
HAUL	NOT NULL	NUMBER(3)
PRED_SPECN	NOT NULL	NUMBER(4)
PRED_NODC	NOT NULL	NUMBER(11,1)
PRED_LH		NUMBER(1)
PRED_FULL		NUMBER(1)
PRED_DIG		NUMBER(1)
PRED_STOMWT	NOT NUL	NUMBER(8,3)
PREY_NODC		NUMBER(11,1)
PREY_LH		CHAR(1)
PREY_CNT		NUMBER(4)
PREY_TWT	NOT NULL	NUMBER(10,5)
PRED_SEX		NUMBER(1)
PREY_PARTS		CHAR(1)
PRED_LEN	NOT NULL	NUMBER(4,1)
PRED_MAT		NUMBER(1)
PRED_WT		NUMBER(7,1)
START_HOUR		NUMBER(4)
HAULJOIN		NUMBER(12)
PREDJOIN		NUMBER(12)
NOTE		CHAR(100)

Table 2. Foodlab.PreyLen table definition.

Column Name	Null?	Data Type
QUARTER		NUMBER(1)
YEAR	NOT NULL	NUMBER(4)
VESSEL	NOT NULL	NUMBER(4)
CRUISE	NOT NULL	NUMBER(6)
TYPE	NOT NULL	NUMBER(1)
STA_ID_LET		CHAR(2)
STA_ID_NUM		NUMBER(3)
SEQ_NUM		NUMBER(4)
HAUL	NOT NULL	NUMBER(3)
PRED_SPECN	NOT NULL	NUMBER(4)
PRED_NODC	NOT NULL	NUMBER(11,1)
PRED_LH		NUMBER(1)
PRED_LEN	NOT NULL	NUMBER(4,1)
PRED_SEX		NUMBER(1)
PREY_NODC	NOT NULL	NUMBER(11,1)
PREY_LH		CHAR(1)
PREY_SZ1	NOT NULL	NUMBER(8,3)
PREY_SZ2		NUMBER(8,3)
PREY_SZ3		NUMBER(8,3)
EMPTY_1		NUMBER(8,3)
PREY_SEX		NUMBER(1)
HAULJOIN		NUMBER(12)
PREDJOIN		NUMBER(12)

Table3. Foodlab.Haul table definition.

Column Name	Null?	Data Type
VESSEL	NOT NULL	NUMBER(4)
CRUISE	NOT NULL	NUMBER(6)
HAUL	NOT NULL	NUMBER(4)
YEAR	NOT NULL	NUMBER(4)
MONTH	NOT NULL	NUMBER(2)
DAY	NOT NULL	NUMBER(2)
RLAT	NOT NULL	NUMBER(8,2)
RLONG	NOT NULL	NUMBER(9,2)
GEAR_DEPTH		NUMBER(4)
BOTTOM_DEPTH		NUMBER(4)
START_HOUR		NUMBER(3)
DURATION		NUMBER(5,2)
DISTANCE		NUMBER(6,2)
HAUL_TYPE		NUMBER(3)
STRATUM		NUMBER(5)
SURFACE_TEMP		NUMBER(4,2)
GEAR_TEMP		NUMBER(4,2)
BOTTOM_TYPE		NUMBER(3)
WIRE_OUT		NUMBER(4)
GEAR		NUMBER(4)
ACCESSORIES		NUMBER(4)
SUBSAMPLE		NUMBER(2)
PERFORMANCE		NUMBER(6,2)
INPFC_AREA		NUMBER(3)
STATIONID		VARCHAR2(9)
HAULJOIN		NUMBER(12)
START_DATE		DATE
REGION	Not Null	VARCHAR2(6)
CRUISE_TYPE	Not Null	VARCHAR2(20)

Table 4. Foodlab.Intest table definition.

Column Name	Null?	Data Type
QUARTER	NUMBER(1)	
YEAR	NOT NULL	NUMBER(4)
VESSEL	NOT NULL	NUMBER(4)
CRUISE	NOT NULL	NUMBER(6)
TYPE	NOT NULL	NUMBER(1)
STA_ID_LET		CHAR(2)
STA_ID_NUM		NUMBER(3)
SEQ_NUM		NUMBER(4)
HAUL	NOT NULL	NUMBER(3)
PRED_SPECN	NOT NULL	NUMBER(4)
PRED_NODC	NOT NULL	NUMBER(11,1)
PRED_LH		NUMBER(1)
PRED_FULL		NUMBER(1)
PRED_DIG		NUMBER(1)
PRED_INTWT	NOT NULL	NUMBER(8,3)
PREY_NODC		NUMBER(11,1)
PREY_LH		CHAR(1)
PREY_CNT		NUMBER(4)
PREY_TWT		NUMBER(8,3)
PRED_SEX		NUMBER(1)
PREY_PARTS		CHAR(1)
PRED_LEN	NOT NULL	NUMBER(3)
PRED_MAT	NUMBER(1)	
PRED_WT	NUMBER(7,1)	
START_HOUR	NUMBER(4)	
HAULJOIN	NUMBER(12)	
PREDJOIN	NUMBER(12)	

Table 5. Predator Life History Codes

Code	Description
6	larva
7	juvenile
8	adult
C	unknown

Table 6. Prey Parts Codes

Code	Description
blank	whole prey found or empty stomach
1	parts (different but from same taxon)
2	siphon
3	shells
4	legs
5	setae
6	chelae
9	bones
A	heads
B	eyes
C	beaks
D	tails
P	proboscis
L	leg or chelae

Table 7. Prey Life History Code

Code	Description
1	egg
2	nauplius
3	zoea
4	megalops larva
5	veliger larva
6	larva
7	juvenile
8	adults
9	comb. of larvae, juv. and adults
A	combo of juv. & adults
B	combo of larvae & juv.
C	life history stage unknown
D	Polyp
E	Cypris
F	Copepodid
G	Pupa
H	Nymph
K	Medusa
L	Egg carrying female
M	egg case
Q	immature
R	subadult
S	trochophore larva
T	subadult and
U	mating pair
V	mysis
W	colony
Y	soft shell